Problem H: The White Knight's Belongings

The Lion, the Unicorn and everyone else were *drummed out of town*, and Alice was alone again in the forest, although not for very long. In a moment, Alice was joined by two Knights on their steeds. The Red Knight arrived first, and wanted to take Alice prisoner, but the White Knight made an appearance shortly after, ready to rescue her!

The two Knights battled for a while, and finally the White Knight came out victorious. The Red Knight left the scene while the White Knight stayed with Alice to keep her company. Alice learned that the Knight was a great inventor, who had some of his best ideas while being upside down —usually the result of falling from his horse head–first.

Figure 1: The White Knight on his horse

He also was carrying with him many curious artifacts, which he liked to keep at hand just to be ready for *anything*. His horse was attired with anklets around his feet, for instance, as a protection for the bites of sharks. Among his possessions you could find a wooden sword, an umbrella, a rattle, a beehive, mousetraps, candlesticks and many other things.

The White Knight uses a number of bags to carry all of his belongings. He also has a method to put the objects in the bags: for any object **A** inside a certain bag, he makes sure that there is at least one other object **B** inside the same bag, such that the names of *A* and *B* have the same amount of vowels *or* they have the same amount of consonants. According to this criteria, he can put a *sword* in the same bag as a *rattle* (each with 4 consonants) or he can put an *umbrella* and a *candlestick* in the same bag (each has 3 vowels).

Given the list of objects that the White Knight owns, what is the minimum number of bags he could use to carry his belongings?

Assume that there are only 5 vowels: **a**, **e**, **i**, **o** and **u**. All other letters are consonants. You may also assume that the Knight's bags have an unlimited capacity.

Input

Input starts with a positive integer **T**, that denotes the number of test cases ($T \leq 1250$).

Each case starts with a line that has single integer **N**, that represents the number of objects that the White Knight is carrying.

$0 < N \leq 100$

N lines follow, each one with a string that describes an object. Each name is composed of lowercase letters from the English alphabet only. All strings have a length between 1 and 50 (inclusive).

Output

For each test case, print the case number, followed by the minimum number of bags that the White Knight needs to carry all of his objects.

Sample Input

```
2
4
sword
umbrella
rattle
candlestick
5
mousetrap
beehive
bell
brush
carrot
```

Output for Sample Input

```
Case 1: 2
Case 2: 1
```

Note

The test data is large. Make sure to use fast I/O methods.